

Serial No. 10/587,111
Art Unit 2482
Brief on Appeal

PU030288
Customer No. 24498

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Applicants: John W. Richardson et al. Serial No.: 10/587,111

Art Unit: 2482 Examiner: Hee-Yong Kim

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For: STORAGE OF ADVANCED VIDEO CODING (AVC) PARAMETER SETS IN AVC
FILE FORMAT

Commissioner for Patents
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APPEAL BRIEF

Applicants appeal the Final Rejection of claims 25, 28-34, 36 and 39-45 as presented in applicants' Amendment after Final Rejection, filed May, 20, 2011, in response to the Final Rejection made in the Office Action dated April 25, 2011. In furtherance of applicants' Notice of Appeal filed June 23, 2011, applicants submit this appeal brief.

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1. Real Party in Interest

THOMSON LICENSING remains the real party in interest by virtue of an assignment from the inventors John W. Richardson and Jens Cahnbley to Thomson Licensing SA, recorded in the United States Patent and Trademark Office on July 24, 2006 at reel/frame 018138/0937, and an assignment from Thomson Licensing SA to Thomson Licensing, recorded in the United States Patent and Trademark Office on July 24, 2006 at reel/frame 018141/0263.

2. Related Appeals and Interferences

None

3. Status of Claims

Claims 25, 28-34, 36 and 39-45 remain pending and stand Finally Rejected, prompting this appeal. Applicants previously cancelled claims 1-24, 26-27, 35, 37-38 and 46-47 without prejudice.

A copy of the pending claims appears in Section 8.

4. Status of Amendments

Applicants filed a first amendment under with the USPTO on October 11, 2010, in response to a first Non-final Office Action mailed September 16, 2010. Applicants filed a second amendment on January 18, 2011 in response to a second Non-final Office action mailed by the USPTO on December 17, 2010. Applicants filed a third amendment on March 24, 2011 in response to a third Non-final Office action mailed March 1, 2011. Applicants submitted an amendment after Final Rejection on May 20, 2011 in response to a Final Office action mailed April 25, 2011. In an Advisory action mailed June 10, 2011, the USPTO entered applicants' Amendment after Final Rejection, but maintained the Final Rejection, thus prompting this appeal.

5. Summary of Claimed Subject Matter

Applicants' independent method Claim 25 recites

A method for streaming a file containing video information, comprising the step of

The preamble of claim 25 finds ample support in applicants' specification at page 3, lines 6-12 which recites:

The present invention provides an extension to the AVC file format for the purpose of storing enhanced metadata to improve streaming services. The extension involves inserting AVC Parameter Sets into the Hint Track metadata of the AVC file format while still being able to provide backwards compatibility with existing streaming servers.

Additional support exists at page 5, lines 5-12 of applicants' specification which recites

The present invention is directed to an extension to the AVC file format, a commonly known streaming digital media storage format, for the purpose of storing enhanced metadata to improve streaming services. The extension involves inserting AVC Parameter Sets into the Hint Track metadata of the AVC file format while still being able to provide backwards compatibility with existing streaming servers. The Parameter Sets are embedded within the AVC file format Hint Track such that the RTSP protocol of the multimedia streaming server is able to transport the Parameter Sets in a media independent fashion to the client.

Claim 25 further recites:

embedding parameter information for facilitating streaming of the video information by embedding the parameter information in a Session Description Protocol (SDP) payload of a hint track of the file, the file also holding the video information such that the parameter information resides separate from the video information so that the parameter information can be streamed independent of the video information.

Ample support for embedding parameter information in a Session Data Protocol payload of a hint track exists at page 9, lines 15-24 and page 10, lines 1-16 of applicants' specification which provides:

FIG. 4 is a diagram illustrating Session Description Protocol (SDP) track description information 400, according to an illustrative embodiment of the present invention. The AVC Parameter Sets 230 are stored within the SDP track description information 400 included within the Hint Track. Storing the Parameter Sets 230 in the Hint Track provides a means for transporting the Parameter Sets 230 using a reliable network transport during the initialization of a stream session. Equally important, backwards compatibility is provided to current streaming servers because an additional extension to the file is not required. The SDP track description information 400 further includes track duration information 410, track description information 420, and other attributes 430. Table 1 illustrates the storage of AVC Parameter Sets within Session Description Protocol (SDP) track description information, according to an illustrative embodiment of the present invention.

```
v=0
s=AVC Streaming Media Program
u=http://
e=admin@
a=control:*
a=range:npt=0 – 60.96
m=video 0 RTP/AVP 96
a=rtpmap:96 AVC/90000
a=paramset:"data:video/jvt;base64,MIME encoded Parameter Sets"
a=control:trackID=2
m=audio 0 RTP/AVP 14
a=rtpmap:14 MPA/22050
a=control:trackID=6
```

TABLE 1

Support for the feature in claim 25 of “*holding the video information such that the parameter information resides separate from the video information so that the parameter information can be streamed independent of the video information*” exists in applicants specification at page 7, lines 3-24 which provides:

The most common streaming servers use the Real Time Streaming Protocol (RTSP) along with the Session Description Protocol (SDP) as a control protocol for the set up and teardown of multimedia streaming sessions between clients and servers. Further,

the Real Time Transport Protocol (RTP) is used as the protocol for data transport for the multimedia information between the servers and clients. It is to be appreciated that the present invention is directed towards streaming servers that use RTSP as their control protocol for session establishment. Of course, one of ordinary skill in the related art will readily appreciate that the present invention may also be modified and implemented with respect to streaming servers that use a protocol other than RTSP as their control protocol, while maintaining the spirit and scope of the present invention.

RTSP is a text-based protocol where messages include a header and payload. The header is commonly defined by the standard, whereas portions of the payload can be application dependent. In the case of an RTSP based multimedia streaming server, the server by default inserts Session Description Protocol (SDP) information included within the AVC file into the RTSP message during initial media streaming negotiation with a client. Therefore, by embedding the AVC Parameter Sets within the SDP information, it is possible for the server to transmit the Parameter Sets of the media stream to the client without having knowledge of the media format. As a result, the Parameter Sets are transmitted prior to any media, and in addition, they are transmitted using a reliable transport protocol since RTSP by default uses Transmission Control Protocol (TCP).

Independent apparatus claim 36 recites:

An apparatus for employing parameter information corresponding to a video information file, comprising:

Ample support for the preamble of this claim can be found at page 10, lines 21-23 of applicants' specification which provides:

FIG. 5 is a high-level block diagram illustrating an apparatus 500 for inserting Parameter Sets into the Hint Tracks of an AVC file 599, according to an illustrative embodiment of the present invention.

Further, Independent apparatus claim 36 recites:

an embedding device embedding for parameter information for facilitating streaming of the video information by embedding the parameter information in a Session Description Protocol (SDP) payload of a hint track of the file, the file also holding the video information such that the parameter information resides separate from the video information so that the parameter information can be streamed independent of the video information.

Ample support for the embedding device recited in applicants' claim 36 exists at page 10, lines 23-26 of applicants' specification which describes applicants' apparatus 500 for inserting Parameter Sets into the Hint Tracks of an AVC file 599 as follows:

The apparatus 500 includes a media and metadata manager 510, a metadata parser 520, an insertion module 530, a media writing module 540, a metadata writing module 550, a hint track writing module 560, and a generic file writing module 570.

The interaction of the elements 510, 520, 530, 540, 550, 560, and 570 is described in detail beginning at line 27 of page 10 and proceeding through line 8 of page 12 of applicants' specification.

Support for the feature in claim 35 of "*holding the video information such that the parameter information resides separate from the video information so that the parameter information can be streamed independent of the video information*" exists in applicants specification at page 7, lines 3-24 as discussed above with respect to applicants' independent method claim 25.

6. Grounds of Rejection to be Reviewed on Appeal

Claims 25-27, 32, 34-38, 43, and 45-47 stand Finally Rejected under 35 U.S.C. § 103(a) obvious over US Patent 6,134,243, in view of US Published Patent Application 2004/0006575.

Claims 28 and 39 stand Finally Rejected under 35 U.S.C. § 103(a) as obvious over US Patent 6,134,243, in view of US Published Patent Application 2004/0006575, further in view of US Published Application 2005/0004968

Claims 29-31, 33, 40-42 and 44 stand Finally Rejected under 35 U.S.C. § 103(a) over US Patent 6,134,243, in view of US Published Patent Application 2004/0006575, further in view of the MPEG 2001/N4858 publication.

7. Argument

A. Introduction

Streaming constitutes a well-known technique for delivery video content from a content source to an end user across a network or combination of networks, such as the Internet. The Advanced Video Coding (AVC) file format provides support for both streaming media data over a network as well as local playback. Typically an AVC codec provides a means for decoupling specific information from the video stream that is relevant for more than one video frame. This specific information forms a Parameter Set. An AVC Parameter Set may include information such as, for example: picture or image size; display window size; macro block allocation map; and so forth. Each slice header within the AVC video stream includes a code that indicates the Parameter Set for use when decoding the video stream. To facilitate streaming, storage of the Parameter Sets in the file should occur in a manner such that the streaming server does not know or care what type of multimedia file to undergo streaming.

Applicants' invention provides a technique for embedding parameter set information in a manner that allows for transport of parameter set information in a media independent manner.

B. Claims 25-27, 32, 34-38, 43, and 45-47 are not obvious over US Patent 6,134,243 in view of US Published Patent Application 2004/0006575

Claims 25-27, 32, 34-38, 43, and 45-47 stand Finally Rejected under 35 U.S.C. § 103(a) as obvious over US Patent 6,134,243 in the name of Annie Jones et al. (hereinafter, "the Jones et al. patent"), in view of US Published Patent Application 2004/0006575 in the name of Mohammed Visharam et al. (hereinafter, the Visharam et al, published application).

The Jones et al. patent recites a technique for processing media data (e.g., audio-visual files) by including data indicating the manner in which such media data should undergo transmission. In particular, the Jones et al. patent suggests embedding such data in a hint track in the file.

With regard to the Jones et al. patent, the examiner has acknowledged that this reference remains silent regarding applicant's feature of embedding the parameter information in a Session

Description Protocol (SDP) payload of a hint track of the file. To supply this missing teaching, the examiner relies on the Visharam et al. published application to teach applicants' feature of embedding parameter information in the Session Data Protocol payload of the hint track.

Notwithstanding the examiner's characterization of Jones et al. and Visharam et al, the combination of references would not teach or suggest all of the features of applicants' claims.

The Jones et al. patent contains only one mention of the term "SDP". At Col. 24, lines 51-57 of their patent, Jones et al. provides the following statement:

The hint track is related to its base media track by a single track reference declaration. (RTP does not permit multiplexing of media within a single RTP stream). The sample description for RTP declares the maximum packet size which this hint track will generate. Session description (SAP/SDP) information is stored in user-data atoms in the track.

Based on this statement, the examiner can only rely on Jones et al for the teaching of including Session Description information within user data atoms (e.g., packets) stored in the hint track. Jones et al. discloses nothing about embedding parameter information in the SDP payload as recited in applicants' claim. Indeed, the examiner has conceded as much.

Like the Jones et al. patent, the Visharam et al. published application contains only one mention of the term "SDP" occurring at paragraph [0172] which provides:

In one embodiment, the capability of a decoder to provide any or all of the enhanced capabilities described in a SEI message is signaled by external means (e.g., Recommendation H.245 or SDP). Decoders that do not provide the enhanced capabilities may simply discard SEI messages.

This paragraph of Visharam et al. says nothing about embedding parameter information in an SDP payload as recited applicants' claims. Rather, this paragraph merely states that the decoder can use the SDP protocol to signal its ability to provide the capabilities described the SEI message. The signaling described in Visharam et al. constitutes an operation entirely different than embedding parameters in the SDP payload.

Given that Visharam et al. says nothing further about using the Session Data Protocol for any purpose other than to signal that capability of the decoder to perform certain operations, applicants question how Visharam et al. would lead a skilled artisan to conceive of embedding parameter information in the SDP payload. While the examiner contends that Visharam et al. teaches the embedding of parameter information in an SDP protocol, the examiner has not

pointed to any disclosure in the Visharam et al. published application other than paragraph [0172], which as discussed above, says nothing about parameter embedding.

Even taking the Jones et al. patent and the Visharam et al published application in their entirety; the examiner still has not shown that the combination of references teaches all of the features recited in applicants' claims. In this regard, applicants note the following admonition in Section 2141 of the MPEP which provides:

The key to supporting any rejection under 35 U.S.C. 103 is the clear articulation of the reason(s) why the claimed invention would have been obvious. The Supreme Court in *KSR* noted that the analysis supporting a rejection under 35 U.S.C. 103 should be made explicit. The Court quoting *In re Kahn*, 441 F.3d 977, 988, 78 USPQ2d 1329, 1336 (Fed. Cir. 2006), stated that "[R]ejections on obviousness cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness." *KSR*, 550 U.S. at ___, 82 USPQ2d at 1396.

In this regard, the examiner has not show that either Jones et al. or Visharam et al. specifically teach embedding parameter information in an SDP payload in a hint track of a video file. In the absence of the combination of Jones et al. and Visharam et al. teaching all of the features of applicants' claims 25-27, 32, 34, 36-38, 43 and 45-47, these claims are non-obvious and patentable over the art of record. Accordingly, applicants request reversal of the 35 U.S.C. § 103(a) rejection of claims 25-27, 32, 34, 36-38, 43 and 45-47.

C Claims 28 and 39 are not obvious over US Patent 6,134,243, in view of US Published Patent Application 2004/0006575, further in view of US Published Application 2005/0004968

Claims 28 and 39 stand rejected under 35 U.S.C. § 103(a) as obvious over the Jones et al. patent, in view of the Visharam et al. published application, further in view of US Published Application 2005/0004968 in the name of Jari Mononen et al. (hereinafter, "the Mononen et al. published application"). In rejecting claims 28 and 39, the examiner contends that the combination of Jones et al. and Visharam et al. suggests applicants' features of embedding the parameter information, but fails to disclose encoding the parameter information in Multipurpose Internet Mail Extensions (MIME). To supply this missing teaching in Jones et al. and Visharam

et al, the examiner relies on the Mononen et al. published application. Applicants traverse the rejection.

As discussed above, the combination of Jones et al. patent and Visharam et al. fail to suggest applicants' feature of embedding the parameter information in a Session Description Protocol (SDP) payload of a hint track of the file.

The Mononen et al. published application concerns a technique for sharing information among mobile terminals in a wireless network. An information server receives request from mobile terminals, each of which makes use of a special protocol to address the server.

The system architecture disclosed in the Mononen et al. published application admittedly makes use of MIME to define rules for labeling different types of transmissions. Further, the Mononen et al. published application makes use of the Session Initiation Protocol/Session Description Protocol (SIP/SDP) for instant messaging and rich call session control. However, the Monson et al. published application does not remedy the deficiencies of the Jones et al. patent and the Visharam published application. Like the Jones et al. patent and the Visharam published application, the Mononen et al. published application does not disclose or suggest embedding the parameter information in a Session Description Protocol (SDP) payload of a hint track of the file, as recited in claims 25 and 36 from which claims 28 and 29 depend, respectively. Therefore, the combination of Jones et al., Visharam et al., and Mononen et al. fail to disclose or suggest all of the features of claims 28 and 39.

Given that the combination of Jones et al., Visharam et al, and Mononen et al. fail to teach all of the features of applicants' claims 25 and 36 from which claims 28 and 39, respectively depend, claims 28 and 39 patentably distinguish over the art of record. Applicants request reversal of the 35 U.S.C. § 103(a) rejection of these claims.

D. Claims 29-31, 33, 40-42 and 44 are not obvious US Patent 6,134,243, in view of US Published Patent Application 2004/0006575, further in view of the MPEG 2001/N4858 publication.

Claims 29-31, 33, 40-42 and 44 stand rejected under 35 U.S.C. § 103(a) as obvious over the Jones et al. patent, in view of the Visharam et al. published application, further in view of the MPEG 2001/N4858 publication. In rejecting these claims, the examiner contends that the

combination of Jones et al. and Visharam et al. teach everything recited in these claims except transmitting the parameter information out-of-band. For this teaching, the examiner relies on the MPEG 2001/N4858 publication. Applicants traverse this rejection.

As discussed above, the combination of the Jones et al. and Visharam et al. fail to applicants' feature of embedding the parameter information in a Session Description Protocol (SDP) payload of a hint track of the file.

The MPEG 2001/N4858 publication concerns storage of AVC (Advanced Video Coding) content for MPEG 4 files. In particular, the MPEG 2001/N4858 publication states in Section 3.14 that each slice undergoes decoding against a set of parameter values, which are presumably sent out of band or in stream.

The MPEG 2001/N4858 publication does not remedy the deficiency of the Jones et al. patent. Nowhere does the MPEG 2001/N4858 publication disclose or suggest embedding the parameter information in a Session Description Protocol (SDP) payload of a hint track of the file, as recited in claims 25 and 36 from which claims 29-31, and 33 and claims 40-42, and 44 depend, respectively. Thus, the combination of the Jones et al. patent, the Visharam et al. published application, and the MPEG 2001/N4858 publication does not disclose all of the features of claims 29-31, 33, 40-42 and 44. Accordingly, applicants request withdrawal of the 35 U.S.C. § 103(a) rejection of these claims.

C. Conclusion

Please charge the amount of \$540.00, covering fee associated with the filing of the Appeal Brief, to Thomson Licensing Inc., Deposit Account No. 07-0832. In the event of any non-payment or improper payment of a required fee, the Commissioner is authorized to charge Deposit Account No. 07-0832 as required to correct the error.

Respectfully submitted,
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Serial No. 10/587,111

Art Unit 2482

Brief on Appeal

PU030288

Customer No. 24498

Patent Operations

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Date: June 23, 2011

8. CLAIMS APPENDIX

Claims 1-24 (cancelled)

25. (Rejected) A method for streaming a file containing video information, comprising the step of:

embedding parameter information for facilitating streaming of the video information by embedding the parameter information in a Session Description Protocol (SDP) payload of a hint track of the file, the file also holding the video information such that the parameter information resides separate from the video information so that the parameter information can be streamed independent of the video information.

Claim 26 (cancelled)

Claim 27 (cancelled)

28. (Rejected) The method of claim 25, wherein the step of embedding the parameter further comprises the step of encoding the parameter information in Multipurpose Internet Mail Extensions (MIME) prior to being embedded within the SDP payload of the Hint track.

29. (Rejected) The method of claim 25, further comprising the step of transmitting the parameter information in an out-of-band transmission.

30. (Rejected) The method of claim 29, wherein said transmitting step further comprises the step of transmitting the parameter information using Transmission Control Protocol (TCP).

31. (Rejected) The method of claim 29, wherein said transmitting step further comprises the step of transmitting the parameter information using Real Time Streaming Protocol.

32. (Rejected) The method of claim 25, further comprising the step of transmitting the parameter information in a media independent transmission.

33. (Rejected) The method of claim 25, wherein said transmitting step comprises the step of transmitting the parameter information prior to any media corresponding thereto.

34. (Rejected) The method of claim 25, further comprising the step of extracting the parameter information from metadata corresponding to at least one media stream.

Claim 35 (cancelled).

36. (Rejected) An apparatus for employing parameter information corresponding to a video information file, comprising:

an embedding device embedding for parameter information for facilitating streaming of the video information by embedding the parameter information in a Session Description Protocol (SDP) payload of a hint track of the file, the file also holding the video information such that the parameter information resides separate from the video information so that the parameter information can be streamed independent of the video information.

Claim 37 (cancelled)

Claim 38 (cancelled)

39. (Rejected) The apparatus of claim 36, wherein the parameter information embedded within the SDP payload by said embedding device is encoded in Multipurpose Internet Mail Extensions (MIME).

40. (Rejected) The apparatus of claim 36, further comprising a transmitter for transmitting the parameter information in an out-of-band transmission.

41. (Rejected) The apparatus of claim 40, wherein said transmitter transmits the Parameter Set information using Transmission Control Protocol.

42. (Rejected) The apparatus of claim 40, wherein said transmitter transmits the Parameter Set information using Real Time Streaming Protocol.

43. (Rejected) The apparatus of claim 36 further comprising a transmitter for transmitting the parameter information in a media independent transmission.

44. (Rejected) The apparatus of claim 36, wherein said transmitter transmits the parameter information prior to any media corresponding thereto.

45. (Rejected) The apparatus of claim 36, further comprising an extractor for extracting the parameter from metadata corresponding to at least one media stream.

Claim 46 (cancelled)

Claim 47 (cancelled)

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9. RELATED EVIDENCE APPENDIX

None.

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10. RELATED PROCEEDINGS APPENDIX

None